I CLAIM:

1. A high density server comprising:

a midplane board;

multiple hot swappable processor cards having lengths of between 240 millimeters and 318 millimeters and multiple hot swappable power supply cards horizontally mounted on a back side of the midplane board;

multiple hot swappable hard drive cards, multiple hot swappable network control cards, multiple expansion cards and a KMV switch card horizontally mounted to a front side of the midplane board;

a CPCI J2 bus formed on the midplane board connecting the processor cards, the hard drive cards and the KMV switch, forming a network controlled by the multiple network control cards, wherein the multiple power supply cards supply power to the processor cards and hard drive cards through the CPCI J2 bus; and

CPCI J1 female connectors on each of the server cards having pinouts the mirror images of the pinouts of the CPCI J1 female connectors on each of the expansion cards;

and wherein each of the server cards controls at least two of the expansion cards using PCI signals routed though a CPCI J1 bus passing through the midplane board.

2. The high-density server of Claim 1 wherein each of the processor cards controls exactly two of the expansion cards.

3. The high-density server of Claim 1 comprising exactly 8 processor cards mounted on the midplane board.

4. A high-density server comprising:

a midplane board having opposing front and back sides;

a midplane board front-side connector connected to the front side of the midplane board;

an expansion card having an expansion-card connector connected to the front-side connector;

a midplane board back-side connector connected to the back side of the midplane board;

electrically conductive leads passing through the midplane board and electrically connecting the expansion card to the back-side connector; and

a processor card having a processor-card connector connected to the back-side connector such that the pinout assignments of the processor card are the mirror images of the pinout assignments of the expansion card.

5. The server of Claim 4, wherein:

the midplane board front-side connector is one of multiple midplane board front-side connectors connected to the front side of the midplane board;

the expansion card is one of multiple expansion cards each having an expansion-card connector connected to the multiple midplane board front-side connectors;

the midplane board back-side connector is one of multiple midplane board back-side connectors connected to the back side of the midplane board;

additional electrically conductive leads pass through the midplane board electrically connecting at least two of the multiple expansion cards to at least one of the multiple midplane board back-side connectors; and

the processor card is one of multiple processor cards each having a processor-card connector connected to the midplane board back-side connectors such that the pinout assignments of the additional processor cards are the mirror images of the pinout assignments of the expansion cards and so that at least one of the processor cards can control at least two of the expansion cards.

6. The server of Claim 5, further comprising:

conductive traces extending along the midplane board electrically connecting the processor cards; and

a network control card connected to the conductive traces and controlling a network formed between the processor cards and conductive traces.

7. The server of Claim 6, wherein the network further comprises a KMV switch for switching electrical communications between a keyboard, mouse and video switch and the multiple processor cards.

8. The server of Claim 6, wherein the network control card is one of the set consisting of a network switch, a network hub, a fiber channel arbitrate loop hub and a fiber channel arbitrate loop switch.

9. The server of Claim 6, wherein the conductive traces connect the processor cards to the network control card in a daisy-chain or star network configuration.

10. The server of Claim 6, further comprising additional redundant network control cards electrically connected to the processor cards via the traces for controlling the network.

11. The server of Claim 6, wherein the network further comprises a fiber channel hard drive connected to the front side of the midplane board.

12. The server of Claim 6, further comprising multiple power supply cards attached to the midplane for supplying power to the processor cards via the traces.

13. The server of Claim 4, wherein:

the midplane board front-side connector has a first half with 5 rows of 22 midplane board front-side connector pins;

the expansion-card connector has a first half with 5 rows of 22 sockets for receiving the midplane board front-side connector pins thus forming a front-side connection interface;

the midplane board back-side connector has a first half with 5 rows of 22 midplane board back-side connector pins

the processor-card connector has a first half with 5 rows of 22 sockets for receiving the midplane board back-side connector pins thus forming a back-side connection interface; and

wherein the back-side connection interface is the mirror image of the front-side connection interface.

14. The high-density server of Claim 4, wherein the pinout assignments of the expansion card are standard J1 CompactPCI assignments and the processor card is configured to utilize the mirror image of standard J1 CompactPCI pinout assignments.

15. A high-density server comprising:

a midplane board having opposing front and back sides;

multiple processor cards physically and electrically connected to the midplane board;

multiple network control cards physically and electrically connected to the midplane board; and

multiple power supply cards physically and electrically connected to the midplane board.

16. The high-density server of Claim 15, wherein the processor cards, network control cards and power supply cards are connected to the midplane board via CompactPCI connectors.

17. The high-density server of Claim 16, wherein the processor cards have pinout definitions the mirror image of J1 CompactPCI front side pinout definitions.

18. The high-density server of Claim 16, wherein pin connectors are attached to the midplane board and socket connectors are attached to the processor cards, network control cards and power supply cards and wherein pins of the pin connectors are secured into sockets of the socket connectors to physically and electrically connect the multiple processor cards, multiple network control cards and multiple power supply cards to the midplane.

19. The high-density server of Claim 15, further comprising a KMV switch physically and electrically connected to the midplane board.

20. The high-density server of Claim 15, further comprising multiple fiber channel hard drive cards physically and electrically connected to the midplane board.

21. The high-density server of Claim 15, wherein the network control cards are selected from the group consisting of a network switch, a network hub, a fiber channel arbitrate loop hub and a fiber channel arbitrate loop switch.

22. The high-density server of Claim 16, wherein at least one of the multiple processor cards controls at least two expansion cards through a J1 portion of a CompactPCI connector.

23. The high-density server of Claim 16, further comprising conductive traces extending along the midplane board to electrically connect the multiple processor cards, multiple network control cards and multiple power supply cards through J2 portions of the CompactPCI connectors.

24. The high-density server of Claim 23, wherein the multiple network control cards control through J2 portions of the CompactPCI connectors a network formed from the multiple processor cards, multiple network control cards, multiple power supply cards and connecting conductive traces.

25. The server of Claim 24, wherein the conductive traces connect the multiple processor cards, multiple network control cards, and multiple power supply cards in a daisy-chain or star network configuration.

26. The server of Claim 24, further including a chassis enclosing the midplane board, multiple processor cards, multiple network control cards, and multiple power supply cards.

27. The server of Claim 24, wherein the processor cards, network control cards and power supply cards are hot swappable so that any of the cards can be replaced without shutting down the network.

28. The server of Claim 24, wherein the network will continue to operate even if any one of the processor cards, network control cards and power supply cards fails to operate.

30. The server of Claim 15 wherein:

the front and back sides of the midplane board are substantially rectangular with a longer edge of the rectangle defining an x-axis

each of the processor cards have a processor card front and back side having a shorter edge defining a y-axis;

and wherein the processor cards are physically connected to the midplane board in a vertical configuration so that the y-axis is substantially perpendicular to the x-axis.

31. The server of Claim 15 wherein:

the front and back sides of the midplane board are substantially rectangular with a longer edge of the rectangle defining an x-axis

each of the processor cards have a processor card front and back side having a shorter edge defining a y-axis;

and wherein the processor cards are physically connected to the midplane board in a horizontal configuration so that the y-axis is substantially parallel to the x-axis.

32. A high-density server comprising:

a midplane board having opposing front and back sides;

multiple expansion cards physically and electrically connected to the front side of the midplane board through a CompactPCI pin connector;

multiple processor cards physically and electrically connected to the back side of the midplane board through a reversed CompactPCI pin connector;

wherein the processor cards have a length of greater than 160 millimeters.

33. The server of Claim 32, wherein the processor cards have lengths of approximately 267 millimeters.

34. The server of Claim 32, wherein the processor cards have widths of approximately 3U.

35. The server of Claim 32, wherein the processor cards have widths of approximately 6U.

36. The server of Claim 32, wherein the processor cards have lengths of between 240 millimeters and 320 millimeters.